Restricted

NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

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TABLE OF CONTENTS

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Pressure Breathing: Certain Aspects of Its Military and Therapeutic Significance: The following is an abstract of a paper presented November 16, 1944, at the Autumn Meeting of the National Academy of Sciences by Comdr. J. M. Steele (MC), USNR:

Pressure breathing is a term that has come to be applied to the use of positive pressure to aid respiration. It serves two main purposes: (1) to decrease pulmonary edema, and (2) to decrease anoxia.

Clinical and experimental studies conducted by Barach and others during the course of the past ten years have demonstrated that high degrees of negative pressure develop in the alveolar spaces of patients with inspiratory obstruction of the trachea and in patients with emphysema and asthma. They have shown also that this negative pressure is harmful and may favor the exudation of fluid into the lungs.

It has been well established that intrapulmonary pressure affects blood flow. Diminished pulmonary pressure tends to increase cardiac output and increased pulmonary pressure tends to decrease cardiac output. These effects are produced in part by alterations in the venous return.

More recently the possibility has been explored that additional pressure in the pulmonary bed might increase the ceiling of aviators. At different altitudes and under various conditions breathing against pressure has been found to increase the aviator's ceiling to different degrees by effecting greater oxygenation of the arterial blood.

Anatomically, positive pressure tends to dilate and keep open bronchioles and alveoli.

Physiologically, positive pressure accomplishes several things: (1) it diminishes the effective pressure difference between blood vessels and alveoli and so helps to reduce exudation; (2) if continuous, it tends to make the region in which the normal tidal air is taken in move up toward the upper capacity of the lungs, or, if intermittent (during inspiration), it greatly increases tidal volume; (3) it increases slightly, i.e., in proportion to the pressure used, the pressure under which gas is delivered to the blood; (4) it decreases inflow into the right heart and augments the outflow from the pulmonary vascular bed.

Its pathophysiological effects are not entirely clear but there is evidence suggesting that the increased pressure (1) tends to prevent the occurrence of exudation of fluid into tissue from the blood stream and aids in returning to the blood stream that which has already escaped (This fact is not surprising in view of Rossiter's observation that a pressure of 10 mm. Hg. will return the edematous fluid of burns to the blood stream.); (2) distends alveoli which are not otherwise open; (3) presumably dilates bronchioles which are abnormally constricted by muscular spasm.

The chief tactical military use has been in aviation. It is employed to increase the absolute ceiling of aviators by better oxygenation of the blood at

a given altitude, to prevent inboard leaks of masks as a safety measure while flying at present altitudes, and to provide an essential emergency escape measure from planes with pressurized cabins at extreme altitudes. Its therapeutic use in military medicine does not differ greatly from its industrial and civilian uses and will be discussed along with them.

Intermittent (inspiratory) pressure breathing of air increases the ceiling out of all proportion to the increase in oxygen pressure. This increase is not all due to the pressure per se. The phrase "effective respiration" has been used by Behnke to cover the obviously greater degree of ventilation which takes place with the application of positive pressure and which results in increased oxygen pressure in the alveolar air as well as diminished carbon dioxide pressure.

The mechanism by which pressure breathing of air increases oxygen content of the blood when, without it, oxygen pressure is insufficient to oxygenate it normally is, at present, not well understood. It will be necessary to quantitate the part played by the actual increase in pressure and that played by hyperventilation and other factors ("effective respiration" of Behnke, i.e., degree of distention of lungs, diminution of relative dead space, etc.) Most workers have enough evidence at hand now to indicate that the increased oxygenation of the blood, particularly in the case of intermittent administration of pressure, is due simply to increased ventilation, or hyperventilation.

In general, no matter what the rate of respiration, the curve of oxygen saturation of the blood tends to follow the rate of ventilation with great constancy. Furthermore, when the respiratory rate is slow, the fluctuations in oxygen saturation with each respiratory cycle are large, and, when the rate is fast, they disappear.

There is evidence also that a slow rate is somewhat more effective than a rapid one. When the ventilation rate is increased sharply without change in respiratory rate, the oxygen saturation rises. When the respiratory rate is increased without change in the ventilation rate, little alteration in the oxygen saturation curve occurs.

It is of some importance also that carbon dioxide content of blood regularly falls to a greater degree in simple hyperventilation than it does in hyperventilation against pressure. One must not lose sight of the fact that the object of pressure breathing is not only to increase oxygen content of blood but to increase the aviator's ceiling. If loss of carbon dioxide, by inducing spasm or dizziness, interferes with his flying ability, then the purpose of the work has been defeated.

Hyperventilation of moderate degree increases the oxygen ceiling by from 6,000 to 8,000 feet.

Breathing against pressure may be employed for the relief of asthmatic attacks and of the pulmonary congestion and edema of heart failure. There seems to be little question as to its effectiveness in a certain proportion of patients. The evidence for its effectiveness in patients with pulmonary edema lies in the disappearance of rales from the chest shortly (twenty to forty minutes) after starting pressure breathing and their return two to four hours after discontinuance of pressure breathing. The rales can again be abolished by resuming pressure breathing.

Another clinical situation in which expiratory pressure breathing has been of inestimable value is in treating the pulmonary congestion and edema which so commonly follow the surgical relief of a tracheal or bronchial obstruction.

A situation of vast importance to both industrial and military medicine is the occurrence of pulmonary edema following the inhalation of irritant gases. Use of pressure breathing for the treatment of pulmonary edema due to this cause may be somewhat less promising than for that due to cardiac failure because of the nature of the injury and of the type of fluid transuded into the alveoli. In the case of irritant gases, one is dealing with damaged capillaries which have become more permeable and a fluid which has some of the characteristics of an exudate, tending to clot; while in acute pulmonary edema of heart failure, one is dealing with presumably normal but widely distended capillaries and a thin fluid transudate. The evidence obtained from industrial gas poisoning due to chlorine, phosgene, the oxides of nitrogen, cadmium, phosphorus penta- and trichloride and others indicates that pressure breathing of oxygen is quite efficacious clinically.

Unfortunately, data on inhalation of air under pressure in patients appear not to be available. Prior to the development of edema - and usually four to twelve hours pass before edema develops - air would seem, a priori, to be the gas mixture of choice, since inhalation of pure oxygen may, in itself, give rise to edema. At this stage, pressure breathing may be regarded as an important prophylactic procedure.

During the past few years, the tremendous development in breathing equipment, stimulated chiefly by the needs of aviators, has provided new ways to administer pressure breathing. Instead of simple expiratory resistances in masks, small light valves and demand regulator systems permit giving continuous positive pressure or inspiratory or expiratory pressure alone. In addition, when both inspiratory and expiratory positive pressure are desirable, the ratio of one to the other can be varied. Various ratios can be set and average pressures accurately chosen.

Present equipment makes it possible for the individual undergoing treatment to control his respiratory pattern - to breathe as rapidly or slowly, as

deeply or shallowly as he sees fit. Face masks have also undergone such marked improvement in comfort, fit and efficiency that the general distaste for wearing masks - often suggestive of claustrophobia - may no longer be encountered. The value of these developments to dyspneic patients, in whom any restriction or regulation of respiration is often unbearable, has yet to be appraised but is unquestionably great and extends the scope of therapeutic usefulness of pressure breathing to, an at present, unknown degree.

In the future, cardiac edema, asthma, postoperative atelectasis, hypostatic pneumonia, edema following relief of trachial obstruction, edema due to irritant gases, and, indeed, even degenerative lesions and fibrosis, may all be found to be susceptible to treatment by pressure breathing. Each, however, may have a distinct pattern which is best suited to it. For example, expiring against pressure may be too fatiguing for a cardiac patient, while pressure during inspiration may lessen the work of breathing, and at the same time aid in clearing the lungs of moisture. On the other hand, continuous pressure throughout the whole respiratory cycle may conceivably be more useful in preventing or reducing edema due to inhalation of an irritant gas.

The particular ratios of inspiratory to expiratory pressure best suited to particular conditions are unknown, but they are almost certainly different for different conditions. Future clinical research may reveal further uses for pressure breathing in disease of the lungs to which it has not yet seemed applicable. The innumerable permutations possible between breathing patterns and various clinical conditions in which expiratory pressure has already been used with benefit, suggest that much better results will attend a careful review of the use of new equipment in these conditions.

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Administration of Fluids in Severe Burns: The following summary was written for the Bumed News Letter by Dr. D. W. Richards, Jr., Consultant on Shock, Committee on Medical Research of the Office of Scientific Research and Development.

A considerable degree of agreement has been reached among the various clinical groups studying burns in this country on the use of general supportive measures, particularly fluids required in the successive clinical stages of this type of injury.

In an effort to interpret the consensus on this subject, the Subcommittee on Shock of the National Research Council has had in preparation, during the last two months, a memorandum on the management of fluids in burns. This has been distributed, in preliminary form, to a number of investigators working in the field, for review and suggestion, and the text revised accordingly.

The work has been under the immediate direction and editorship of Dr. H. N. Harkins. It is anticipated that the memorandum, in its final form, will be presented in the Bumed News Letter in the near future.

The chief points covered may be summarized:

(1) Following Cope's classification, the fluid compartments of the body that must be served in treatment are: (a) blood volume, (b) tissue volume, especially extracellular tissue volume, (c) fluid available for urinary volume.

(2) In a severe burn, two liters or more will be required to make up for the decrease in blood volume; there will be an added requirement in extracellular tissue volume of six to ten liters by reason of dehydration, loss of fluid from burned surfaces, and the massive local tissue edema that must accumulate in response to tissue injury. Also, there will be a requirement of about 1500 c.c. daily for urine volume. Thus the total volume of fluid needed for replacement in the first 48 hours after a severe burn will be 8,000 to 15,000 c.c.

(3) The basis of the treatment of burns during the shock stage - first 48 hours - is, of course, intravenous plasma, or an adequate plasma substitute. The old formulae, based on extent of burn, or on hematocrit, etc. for calculating the amounts of plasma needed, are still considered useful.

(4) Intravenous salt solution also is recommended in amounts about equal to that of plasma. To control acidosis, "physiological electrolyte solution" (two parts physiological saline to one part one-sixth molar sodium bicarbonate or one-sixth molar sodium lactate solution) is preferred.

(5) A new emphasis is that of administering large amounts of physiological electrolyte solution by mouth, as soon as the patient is definitely out of shock. From 3,000 to 8,000 c.c. of salt solution can usually be taken by mouth in the first 24 hours, in addition to the fluid taken by vein, and from 3,000 to 5,000 c.c. in the second 24 hours.

(6) These large total volumes of fluid (8,000 to 15,000 c.c.) are well tolerated in the first 48 hours. A special point is made of pushing fluids vigorously until urinary flow is restored, and maintaining fluid administration so that urine output will be over 50 c.c. per hour, or from 1,500 to 2,000 c.c. per day.

(7) After the first 48 hours, fluid intake can be less. One can be guided chiefly by urinary volume. Salt intake should be at least 10 Gm. a day.

(8) In the later stages, in the presence of infection, fever or hypoproteinemia, increasing the fluid and salt intake may result in edema formation

with no increase in urinary output. Moderate fluid and salt intake is indicated in this situation with special effort to control infection, maintain nutrition, and correct anemia or hypoproteinemia.

(9) Whole blood transfusions are recommended for the first 48 hours to supplement plasma; later, whole blood is given repeatedly and in large amounts to combat anemia and hypoproteinemia.

(10) A few notes are given on feeding and general nutrition, but this aspect of treatment is considered largely outside the scope of the memorandum.

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Penicillin in Anthrax: Heilman and Herrell have investigated the effectiveness of penicillin in the treatment of experimental anthrax in mice. In one experiment 40 mice were inoculated subcutaneously with 10,000 times the lethal number of anthrax bacilli. No treatment was given to 20 of the animals. The other 20 animals received intramuscular injections of penicillin begun 16 hours after inoculation and continued for 12 days. The treated animals had a mortality of 45 per cent, while all of the untreated animals died.

In the second experiment 40 mice received approximately 10 times the lethal number of organisms. Half the animals received treatment with penicillin beginning one hour after the inoculation and continuing for 12 days. The other half were untreated. In this series the mortality among the untreated mice was 100 per cent, while all of the treated animals survived. (Proc. Staff Meet., Mayo Clin., Oct. 4, '44.)

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The Committee on Chemotherapy of the National Research Council has received reports of four human cases of anthrax treated with penicillin. All survived.

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Penicillin in Diphtheria: The diphtheria bacillus presents a dual threat to the susceptible host. It produces a local membranous infection which in certain instances may block the upper respiratory passages, and it secretes a soluble toxin which may seriously damage such remote tissues as the myocardium and the peripheral nerves. Antitoxin, given early in the course of the disease, not only prevents the remote effects of the toxin but appears clinically to have a favorable effect upon the local infection. It is obviously the therapeutic agent of choice.

In certain instances either the unavailability of diphtheria antitoxin or a hypersensitivity of certain patients to it will make it desirable to have an alternative weapon. The Corynebacterium diphtheriae has been shown to be susceptible in vitro to the bacteriostatic action of penicillin. A recent report to the Committee on Medical Research of the Office of Scientific Research and Development (Southworth - London News Letter #122) states: "Diphtheria has occurred in (German) prisoners of war and where antitoxin has not been available or sensitivity was present, penicillin has proved very effective."

In cases where, in spite of the administration of antitoxin, the local infection still presents a threat to life - for example, laryngeal diphtheria - administration of penicillin as an adjunct to specific therapy would seem desirable.

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Penicillin in Bacterial Endocarditis: A preliminary report presenting evidence that in cases of bacterial endocarditis the infection could be arrested by treatment with penicillin was made in the Bumed News Letter of August 4, 1944. Further clinical trial of penicillin in the therapy of this condition has been made and the results justify a considerable degree of optimism as to its effectiveness.

Six hundred and twenty patients with bacterial endocarditis have been treated in various clinics under the supervision of the Committee on Chemotherapy of the National Research Council. Reports concerning two hundred and ninety-nine of these cases have been analyzed and the results have been tabulated as follows:

Diagnosis	Total Number of Cases	Recovered or Improved	Died	No Effect	Temporary Improvement
Bacterial endarteritis	1	1	-	-	-
Abacterial	1	-	1	-	-
Brucellosis	1	-	-	1	-
Gonococcus	4	2	2	-	-
Meningococcus	3	1	1	1	-
Micrococcus tetragenus	1	-	1	-	-
N. flavius	1	-	1	-	-
Pneumococcus	49	15	31	2	1
Staphylococcus	80	20	55	4	1
Streptobacillus moniliformis	1	-	1	-	-
Hemolytic streptococcus	10	2	8	-	-
Non-hemolytic streptococcus	15	7	3	4	1
Streptococcus viridans	132	73	27	19	13
	299	121	131	31	16

The cases of endocarditis due to Streptococcus viridans that have been considered as arrested have been followed for periods of from two to ten months. The daily dosage of penicillin has varied between 200,000 and 300,000 units. The average length of the initial course of treatment has been from two to eight weeks. Some of the patients have received more than one course of treatment.

It is tentatively recommended that in the initial course of therapy in patients with subacute bacterial endocarditis penicillin be administered at a dosage of 300,000 units daily and for a period of three to eight weeks, the length of the course depending on the rapidity of clinical response. Failure of the initial course to arrest the infection warrants repetition or resumption of therapy.

A few patients who have been treated with penicillin and whose infection has appeared to be clinically arrested have died of heart failure. Post mortem examination has revealed the presence of small vegetations on the heart valves showing evidence of extensive fibrosis and in some instances harboring a few viable organisms. This finding suggests the possibility that it may take a long time to eliminate the bacteria from the lesions completely and that ideal treatment may consist of intensive initial treatment - 300,000 units a day as long as it is clinically indicated - followed by two or three or more months of treatment at a lower dosage level.

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Nervous Factor in Traumatic Shock: Dogs subjected to traumatic shock rarely survive when the residual blood volume is less than 70 c.c./kg. body weight (control volume 100 c.c./kg.). In shock produced by simple hemorrhage dogs seldom die unless the blood volume is reduced to below 60 c.c./kg. This is true whether or not anesthesia is used during the bleeding.

This evidence suggests that factors other than reduction in blood volume are operating as a cause of death following trauma. To what extent these factors are nervous in origin is undetermined. In preliminary experiments sublethal hemorrhage (residual blood volume more than 60 c.c./kg.) coupled with electrical stimulation of the central end of both sciatic nerves has caused death at residual blood volume levels well tolerated by animals subjected to hemorrhage alone. (Gregersen, Columbia Univ., OEMcmr-66, Progress Report #19; CMR Bulletin #16.)

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Sulfonamide-Produced Granulocytopenia: One of the idiosyncrasies occasionally manifested to drugs containing the benzene ring is granulocytopenia. This blood dyscrasia, when caused by sulfonamide, usually manifests itself in the second or third week. Certain characteristics of sulfonamide-induced granulocytopenia as it occurs in human beings suggest that the reaction is an allergic one. It has been observed during the prophylactic administration of sulfadiazine that this reaction tends to be reversible when the drug is discontinued but proves irreversible when it is administered in therapeutic doses. On two occasions sudden death seemed to be precipitated in patients with sulfadiazine reactions when they were transfused with blood from donors who were taking sulfadiazine, 1.0 Gm. daily.

On the other hand, when rats are fed any one of the sulfonamides as part of a synthetic diet, they regularly develop granulocytopenia and anemia. However, the addition to the diet of a certain fraction of liver now identified as "folic acid" will prevent this untoward reaction in rats. Once granulocytopenia has developed in these animals, the addition of folic acid will restore the blood picture to normal even though the administration of the sulfonamide is maintained. (See review of work of Sebrell and others, Bumed News Letter, May 12, 1944.)

In general, most deaths from granulocytopenia due to sulfonamide can be prevented.

During sulfonamide therapy and, where practicable, during sulfonamide prophylaxis, frequent estimations of the white blood and differential counts should be made and the drug should be discontinued at the first sign of granulocytopenia.

When a patient who has been receiving sulfadiazine prophylaxis develops an infection ordinarily susceptible to sulfonamide therapy, treatment with sulfonamide should be withheld until it has been established that he does not have granulocytopenia or any other untoward reaction. If an untoward reaction is suspected or known to be present, the infection should be treated with penicillin.

Under no circumstances should a patient with granulocytopenia be transfused with the blood of a donor who has recently been receiving a sulfonamide.

In the treatment of sulfonamide-induced granulocytopenia, the withdrawal of the offending drug is of paramount importance. Penicillin should be administered to prevent or control infection. Repeated transfusions of whole blood should be given.

The effectiveness of folic acid in preventing or curing sulfonamide-induced granulocytopenia in rats justifies a clinical trial of this substance in the treatment of sulfonamide-induced granulocytopenia in man. Folic acid

is not yet obtainable in sufficient quantities for therapeutic use. However, certain liver extracts have been found to contain relatively large amounts of this substance.

Recently, in the laboratory of the Division of Physiology of the National Institute of Health, five different commercial liver preparations were analyzed for their content of folic acid. The analyses were conducted by a microbiological method using Streptococcus lactis R as a testing organism. On the basis of this method the preparations were found to contain folic acid in the following amounts:

Liver Preparations	Micrograms "folic acid" per ml.
Lilly Solution Liver Extract Purified (15 injectable U.S.P. units per c.c.)	34.0
Lilly Reticulogen (Parenteral Liver Extract with B_1)	29.0
Valentine Extract of Liver, U.S.P. (45 c.c. = 1 oral unit)	1.5
Lederle Solution Liver Extract, Parenteral (15 injectable units per c.c.)	1.4
Squibb Liver Injection Special Lot A (2 U.S.P. units per c.c.)	0.62

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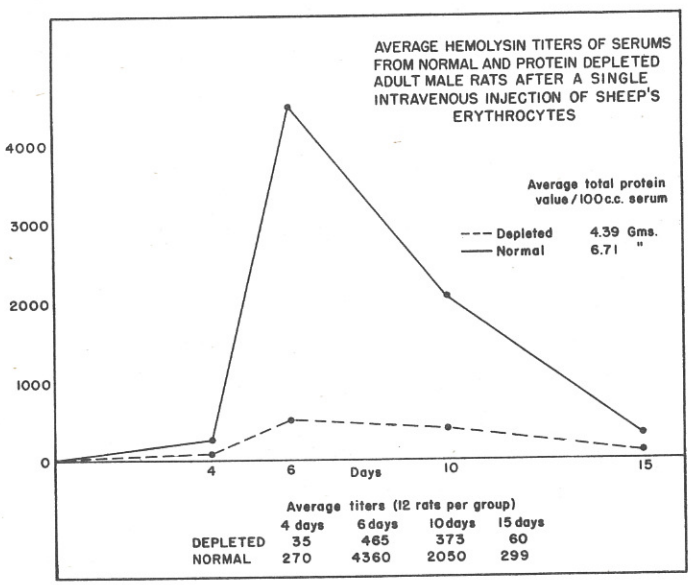
Blood Grouping Serum and Globulin: Recently the demand for blood grouping serum and globulin has exceeded the available supply. The Naval Medical School no longer prepares grouping serum, and all such material is now supplied through the Naval Medical Supply Depots. The chief source is human blood grouping globulin prepared under contract as part of the Navy's fractionation program. (See Bumed News Letter, Sept. 15, '44.)

In supplying blood grouping globulin on requisition to the Supply Depots, preference is being given to extracontinental activities. It is requested that until larger amounts become available activities within the continental limits of the United States prepare their own grouping serum or purchase it on the open market.

Protein Deficiency and Infection: Nutritional emphasis upon protein metabolism in surgical conditions has usually centered upon loss, regeneration and replacement of albumin in relation to surgical shock, burns, blood loss, nutritional edema, regeneration of hemoglobin, impairment of liver function and anesthetic injury. In a recently published paper Cannon et al. emphasize the importance of protein metabolism to the prevention or amelioration of postoperative infection.

Rats were made hypoproteinemic by being deprived of dietary protein. They were then fed in such a way that the sole source of protein was derived from purified globulins, predominantly gamma globulin. The rats showed satisfactory serum-protein regeneration and weight recovery, thus demonstrating that these proteins are of high quality, that is, that they contain the essential amino acids.

In another experiment the authors injected antigen (sheep erythrocytes) into normal rats and also into hypoproteinemic rats and measured the output of antibody (hemolysin) which followed in each of the two groups of animals. The striking difference between antibody output in hypoproteinemic rats and that in normal rats is well demonstrated by the chart.



Since gamma globulin is a high-quality protein, it presumably contains many if not most of the essential amino acids. For its synthesis, therefore, it is necessary that an abundance of these amino acids be provided in the protein reserve or in the daily food. The inference seems warranted, therefore, that in patients with hypoproteinemia - which in the case of protein starvation or of blood or plasma loss will include hypoglobulinemia - repletion will necessitate the ingestion or intravenous administration of proteins containing essential amino acids. (The enzymatic hydrolysate of casein recently added to the Supply Table is ideally suited to this purpose.) Failure of repletion may limit the ability of the patient to produce antibodies and therefore adequately to combat infection. (Ann. Surg., Oct. '44)

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Studies in Wound Healing: Williams and Bissell have studied the effect of many substances on the acceleration of healing when applied topically to uniform-sized wounds in normal rats. The substances studied were vitamins A, C, D and E, thiamine hydrochloride, nicotinic acid, riboflavin, calcium pantothenate, pyridoxine, biotin, "hydrosulphosol", "biodyne", urea-sulfathiazole ointment, amino acids, adenosine, liver extract, cod liver oil, a "vitamin mixture" and sesame oil. The effect also of sulfamerazine used in conjunction with most of these substances was observed. No definite benefit was derived from the use of any of these substances, as judged by frequent observations of the wounds, their tensile strength and the microscopic appearance. (Arch. Surg., Oct. '44.)

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Hypercalcemia and Hypercalcinuria Associated with Immobilization: The occurrence of renal calculi in previously healthy young men who are immobilized suddenly because of injuries is discussed in the Bulletin of the U. S. Army Medical Department of November 1944. Of fourteen patients in a general hospital in North Africa who developed renal stones in late convalescence twelve had been immobilized because of injuries or wounds. The symptoms calling attention to the presence of calculi almost invariably coincided with or followed increased activity, which in some cases was no more than the removal of a cast. Eight of these patients had extensive soft tissue wounds and, in addition, bone injuries. Amputation had been necessary in three.

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It has been shown by Albright and others that hypercalcemia and increased excretion of calcium may occur in young active individuals in whom a large part of the skeleton is suddenly immobilized as by the application of a plaster cast or as a result of infantile paralysis or some other condition producing loss of locomotor function. Hypercalcemia is, however, not present under similar conditions in individuals who have not been active previous to immobilization.

Albright believes that this hypercalcemia results from an underactivity of the osteoblasts in laying down an organic matrix. In the active individual stresses and strains probably constitute the normal stimulus for osteoblastic activity; atrophy of disuse, a special form of osteoporosis, is thought to be a result of a deficiency of this normal stimulus.

Associated with osteoporosis one usually finds normal serum calcium, normal serum phosphorus and normal serum phosphatase levels. Hypercalcemia, however, may occasionally occur in the early stages and may lead to renal complications. These may take the form of renal calculi or of damage to the renal parenchyma.

Preventive measures should include the maintenance of high fluid intake and an effort to maintain maximal motion in parts of the body not included in the cast. (Albright et al., J. Clin. Endocrinol., Sept. '41)

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Failure of Whole Nerve Fresh Homografts in Man: With the establishment of the Neurosurgical Section at Walter Reed General Hospital, it was decided to use homografts for the repair of large nerve defects. An abundant source of material existed in adjoining amputation wards. Experimental studies by Huber in the last war, confirmed and extended recently by English investigators, indicated that nerve regeneration was possible through homografts to a degree almost equal to that noted in autografts and, indeed to that following simple nerve suture.

Eight whole fresh homografts, obtained from amputation stump revisions made at the same time, were placed in extensive nerve defects in seven patients. The grafted segments measured from 29 mm. to 90 mm. and were inserted after mobilization, transplantation and joint posturing had failed to close the neural defect. After transection of the proximal and distal nerve stumps through normal-appearing fascicles, the homografts were sutured in place with 0.003-inch tantalum-wire epineurial sutures. The two anastomotic lines were protected with 0.00025-inch tantalum foil cuffs, and in each instance the central portion of the graft remained unprotected. The time interval between injury and grafting ranged from six to fifteen months.

No evidence of clinical regeneration was evident after an average observation time of six months. The grafts were then exposed under local anesthesia and stimulated with a bipolar faradic current. Stimulation studies showed a normal pain response in six grafts at points varying from the proximal suture line to 20 mm. distal to that area, and in two cases, faint sensory responses were obtained in the distal nerve stump. The grafts, including proximal and distal stumps, were removed, fixed in 10 per cent formalin, sectioned and stained with Bodian's protargol method for nerve fibers and counterstained with aniline blue.

Grossly, the nerve ends and graft portions protected by the foil appeared relatively normal, whereas the unprotected segments were sheathed by constricting adhesions. On longitudinal median section, the fascicular arrangement of the central stump was seen to be interrupted at the proximal suture line, some nerve bundles appearing to end there and others to send fibers into the graft fascicles. In all but the proximal portions of the grafts there had occurred a fatty fibrous transformation with the remaining fascicles showing necrosis or different stages of fibrosis. The distal suture line was demarcated by junctional fibrosis separating the degenerated graft fascicles from the distal stump fascicles largely made up of Schwann cells.

Although the grafts were clinical failures, nerve fibers could be demonstrated in all grafts for distances varying from 5 to 40 mm. This growth, however, failed to maturate under the adverse influence of several factors. These factors are summarized in the following description of a specimen:

"In all of the fascicles, the orderly arrangement of nerve fibers stops at the junction of the graft and from here distally the fibers become entangled in neuromatous whorls and collagenous tissue. The nerve fascicles of the graft have become overgrown with connective tissue and some contain large numbers of fat-laden macrophages. A few nerve fibers have penetrated about 10 mm. into the graft and end abruptly among macrophages and connective tissue fibers - the old nerve tubules show remaining Schwann cells with fibroblasts and abundant endoneural fibrosis. Between the fascicles are tracts of dense fibrous tissue and adipose deposits. All of these tissues appear well vascularized."

It is apparent from these studies that, contrary to results obtained in animals, whole fresh homografts in man will result in histological and clinical failure. Although the force behind nerve regeneration is potent and although the grafts become vascularized, nerve regeneration in whole fresh homografts in man is invariably defeated by the more rapidly developing intra- and interfascicular fibrosis. (Bull. U.S. Army M. Dept., Dec. '44.)

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X-Ray Therapy in Skin Disease: Medical officers are cautioned to restrict the use of X-ray therapy in dermatologic disease to selected lesions known to be responsive to roentgen-rays, and then only after ordinary measures have failed. Treatment must be directed only by properly qualified individuals using calibrated machines. (Prof. Div., BuMed - G. C. Thomas)

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Observations of Gas Bubbles in Pial Vessels of Cats Following Rapid Decompression from High-Pressure Atmospheres: Investigation has been made at the Naval Medical Research Institute of the appearance and mode of origin of gas bubbles in pial vessels of cats following decompression from high atmospheric pressures.

Gas bubbles were observed directly in pial blood vessels following rapid decompression of anesthetized cats from air compressed to 75 pounds per square inch (gauge pressure). When gas bubbles were visible in pial vessels, they always appeared first in the arteries, later in the veins. Gas bubbles were present also in other blood vessels of the body as well as in the right auricle and ventricle. Some animals died although no bubbles appeared in the

pial vessels of the microscopic field under observation. Since, in all animals, the distribution of gas bubbles elsewhere in the body was the same, it may be assumed that, in those instances in which bubbles were not seen, bubbles were present in arteries supplying a portion of the central nervous system other than the field under observation.

Since gas bubbles appear in pial arteries before they appear in veins, and since they are distributed in other vessels irrespective of their appearance in pial vessels, it is concluded that pial gas bubbles are borne to their site of lodgement as gas emboli. Secondarily, as the blood flow through the region decreases, gas bubbles appear in the veins. (Research Project X-284, Report No. 4.)

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Intensive Arsenotherapy of Syphilis: The term, intensive arsenotherapy of syphilis, has usually been applied to those procedures by which antisyphilitic treatment with arsenic is completed in less than 26 weeks. Many schedules of intensive therapy have been devised, varying from a one-day intravenous drip to a 10- or 12-weeks' course of tri-weekly injections. Under the older procedures involving 12 to 18 months of treatment, many civilian patients failed to complete therapy, and many members of the Armed Forces were restricted in their duty to those activities where antisyphilitic therapy was available. The more rapid types of therapy, therefore, have been designed to insure the completion of his course by the civilian patient and to hasten the return to full duty of the patient who is a member of the Armed Services.

It has been known that to cure syphilis it is necessary to give a certain total amount of arsenic, and perhaps bismuth, to a given patient. The overall period of time in which this predetermined dose of these substances is administered has little effect on the end result. Therapy, of course, must be continuous on any schedule to secure a satisfactory result. It is known also that the toxic reactions resulting from arsenotherapy vary roughly in inverse proportion to the length of the treatment; thus, a one-day course of mapharsen results in a far greater number of reactions than a 12-week schedule.

In the Navy routine arsenotherapy can always be made available to patients with syphilis. When cases develop among personnel actually engaged in combat or personnel on duty in activities without medical officers, transfer to facilities where arsenotherapy is available is usually possible. Therefore, the Bureau of Medicine and Surgery has authorized no schedule for arsenotherapy that is completed in less than 26 weeks. Schedules involving 26 weeks or more of treatment compare favorably in their results with shorter courses of treatment and are considerably less dangerous to the patient.

The adoption of penicillin in the treatment of early and latent syphilis, provides a rapid and apparently satisfactory method of therapy and should further reduce any possible need for intensive arsenotherapy. (Prev. Med. Div., BuMed - W. H. Schwartz)

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Blood Plasma in Pneumonia: In a report of 500 cases of pneumonia presented by Hobby in the U. S. Navy Medical Bulletin of September 1944, the author called attention to the fact that certain severely ill patients may be benefited by the administration of plasma or, in the presence of anemia, of whole blood.

A study of the effect of administering plasma to patients with lobar pneumonia has recently been made by Fisher, Andrus and Stephens. Most of the patients were admitted to the hospital within one or two days after the onset of symptoms. Two hundred to 500 c.c. of pooled dry plasma, rendered isotonic in distilled water, were administered intravenously to 18 of 36 cases, usually within 12 hours of admission to the hospital. All patients received routine therapy with sulfonamides. Oxygen was administered when indicated, as well as other supportive therapy.

The plasma-treated patients showed a definitely earlier and more rapid type of clinical recovery than did the controls. Serial X-rays revealed a considerably more rapid resolution in those cases which received plasma.

In 4 patients, short but severe and disturbing hyperpyrexial reactions occurred within the first hour of introducing plasma. These reactions were all in patients who were severely ill, febrile and dehydrated.

The authors believe that plasma may act to compensate for the loss of plasma protein and fluid from the circulation to the consolidating lung and thus be of material value in preventing circulatory collapse due to reduction of circulating blood volume. The more rapid resolution of the pneumonic exudate, as shown by serial roentgenograms, in the plasma-treated cases suggests that the administration of plasma favors the resorption of pulmonary exudate. (J. Can. Med. Serv., Nov. '44.)

* *

The average case of pneumococcus pneumonia responds so satisfactorily to chemotherapy that other forms of treatment are not usually necessary. However, it is reasonable to assume that the severely ill patient in whom massive exudation is associated with impending circulatory collapse may benefit, after rehydration, from the administration of blood plasma.

Reports on Research Projects at the Naval Medical Research Institute Available for Medical Officers:

X-105 Chemical and Physico-Chemical Studies on Human Plasma Preserved in the Liquid State at Room Temperature During Third Year of Storage, Report No. 2.

Conclusions: 1. The chemical and physico-chemical changes found in liquid human plasma stored at room temperature up to 33 months are not of sufficient magnitude to contraindicate extension of storage of such plasma for periods up to at least two years. It should be emphasized, however, that this conclusion will hold only when the plasma is prepared by a "closed" system with scrupulously aseptic technic.

2. This conclusion is substantiated by 1307 clinical administrations of plasma 12-27 months old which show it to be safe and therapeutically effective.

X-180 Dermatitis from Wearing Blue Uniforms (Enlisted Men), Report No. 11.

Conclusions: In view of the more frequent reactions from some of the dyed fabrics than from the undyed wool cloth, it may be concluded that the excess residues are the chief source of the dermatitis. The friction of wool may be a contributing factor. Excess residues, including dye and chrome, must therefore be carefully removed from all fabrics.

X-227 A Visor for the Standard M-1 Helmet to Prevent Injuries to the Face, Report No. One,

Summary: A helmet-visor has been designed to afford face protection from projectiles and missiles, of a degree equal to that afforded by the M-1 helmet. It can be attached to the present standard helmet with ease and when not in use may be worn as part of the helmet.

This study is not an attempt to present a helmet visor of which the design and mechanical operation are final or perfect, but rather an attempt to advance the principle of making a simple addition to the standard helmet, to effect a reduction in disfiguring and incapacitating injuries to the face.

X-304 A Study of the Salivary Sulfonamide Levels when Paraffin and Chicle are Used as Vehicles, Report No. One.

Conclusions: 1. Sulfathiazole in a chewing vehicle produces a high and well sustained sulfonamide level in saliva, without raising the blood level appreciably.

2. These results suggest the initiation of clinically controlled experiments to compare the therapeutic effects on tonsillitis and pharyngitis of (1) sulfathiazole given in chewing wafers and (2) sulfathiazole ingested in tablet or capsule form.

X-371 Design of an Individual First-Aid Kit for Aviation Personnel.

Summary and Conclusions: 1. A compact two-unit plastic container has been designed and packaged to afford moisture resistance, and shock and abrasion protection for essential first-aid equipment for personal use by aviation personnel.

2. Each individual item (tablet, bandage, etc.) retains its moisture resistant protection after the seal is broken.

3. The kit contains:

a. Bandage, gauze, compress, 4" x 4"	1
b. Bandage, gauze, roll, 3" x 6 yd.	1
c. Sulfadiazine, tablets, 0.5 Gm.	15
d. Scopolamine hydrobromide, tablets, 0.65 mgm. (gr. 1/100)	6
e. Morphine tartrate, syrette, 32.2 mgm. (gr. 1/2)	2
f. Triangular bandage, 40"	1

4. The plastic container measures 4.2 x 2.4 x 1.4 in. The approximate weight of the container filled, but excluding the carrying case and the triangular bandage, is 4.7 oz.

NMRI-71 Balloon Type Locator and Marker for Rescue of Ditched Personnel.

Description: A marker device has been designed to be worn on the standard life jacket which will aid in locating, marking, and maintaining visual contact with, ditched personnel.

The suggested device consists of a readily inflatable balloon (helium) which will ride about 50 feet above the water and is packed by twisting, or by folding in a series of internal invaginations so that it can be contained in a relatively small sleeve. The balloon is connected to a helium cartridge by means of a

small rubber tube. The released balloon is held by a strong, high-test fish line which is attached to a reel. The reel is secured to the life jacket. The balloon is made of black rubber. Its surface is divided into sectors, which are alternately coated with fine aluminum powder. This affords reflecting surfaces.

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The Common Skin Diseases (X): Tinea Cruris (Jock strap itch, Dhobie itch, etc.):

Etiology: Epidermophyton inguinale.

Clinical Features: A sharply marginated eruption involving the upper, inner surfaces of the thighs. The typical lesion is dull red and scaly with a papular or vesicular border. Extension to the inguinal folds, intergluteal cleft and scrotum occasionally occurs. Itching is often severe. Although the involvement is usually in the form of solid symmetrical plaques, scattered smaller lesions are often seen.

The sharp margin is a distinctive characteristic. This, however, is often obscured by secondary dermatitis from strong medication. In doubtful cases the diagnosis will depend upon the demonstration of mycelia and spores in the removed scales.

Treatment: In acute or secondarily irritated cases, after gently cleansing, one should begin treatment with wet dressings of potassium permanganate (1:5,000) or Burow's solution (1:20).

The ordinary case will respond to one of the following preparations:

1. Tr. Merthiolate or Metaphen (half or full strength). Paint lesion daily. Dry thoroughly. Apply 5 per cent boric acid in talc freely three times daily.

2. Four per cent salicylic acid in alcohol. Sponge on once or twice daily. Follow with powder as above.

3. Two per cent aqueous solution gentian violet twice daily. Dry completely after applying and follow with powder.

4. Prehn's powder. Rub in thoroughly twice daily.

5. Twelve per cent aqueous solution Sodium thiosulfate. Apply as wet compresses three times daily.

The skin surfaces of scrotum and thigh should be separated with soft compresses. (J. M. Shelton)

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Reimbursement for Property Lost in a Marine Disaster - Issues to Survivors: A request was recently received by the Bureau of Medicine and Surgery for information with respect to supplying to survivors clothing from stores on hospital ships.

The Bureau of Supplies and Accounts has furnished BuMed with the following answer:

In accordance with the Act of October 27, 1943 (57 Stat.), an individual in the Naval Service may be reimbursed for the loss, destruction, or damage of his personal property provided such property was lost, destroyed, or damaged without fault or negligence on his part and occurred:

1. Due to operations of war, shipwreck, or other marine disaster including an accident occurring on board a vessel, or the wreck of an aircraft or other disaster thereto.

2. In consequence of giving attention to the saving of the life of another, or of property belonging to the United States.

3. By reason of shipment on board an unseaworthy vessel by order of an officer authorized to give such order or direct such shipment.

4. By reason of shipment pursuant to orders issued by competent authority, whether or not due to negligence on the part of Government personnel.

5. By reason of furnishing it at the direction of competent authority to another person under conditions of immediate and urgent distress.

Detailed instructions for carrying out the above are contained in Article 1431-10, Bureau of Supplies and Accounts Manual.

In accordance with Secretary of the Navy letter dated 26 August 1943 (Navy Department Bulletin, Cumulative Edition, 31 December 1943, page 139), the policy with respect to emergency provision of clothing and small stores, special and protective clothing, and ship's store stock to survivors of naval and merchant vessels is established as follows:

(a) To naval personnel and to civilian survivors rescued by naval vessels or naval shore activities, including crews of merchant vessels, such issues may be made as are deemed by commanding officers, under the general directives of area commanders, to be necessary to the health and comfort of the personnel concerned.

(b) Special and protective clothing so issued will remain the property of the Government. Commanding officers will take such measures as may be necessary to effect the return to store for reissue or renovation of such articles no longer required for the purpose issued.

(c) To naval personnel landed in neutral countries, or where naval clothing is not available, such civilian clothing and toilet articles as are deemed by the consular agent to be necessary to the health and comfort of the personnel concerned will be purchased by the consular agent and issued to the personnel.

(d) Issues will be limited tc quantities required for the immediate needs of health and comfort and will not be extended to the provision of or the replacement of a full outfit.

The issues described above are deemed to be essential to the war effort and, with the exception of issues of special and protective clothing, will be charged to the Naval Emergency Fund, 1942-1944, Symbol 172/40300.

The foregoing does not affect in any way the claims being handled by the Bureau of Naval Personnel under Circular Letter 88-43 based on 34 U.S.C.

Issues to Marine Corps and Coast Guard personnel may be made in accordance with Article 1431-9, Bureau of Supplies and Accounts Manual.

ALNAV #97, dated 12 May 1943, authorizes transfer of supplies, equipment, and services from naval vessels and activities outside the continental limits of the United States to Army activities located beyond the continental limits of the United States, without reimbursement; such transfers are invoiced monthly in the account in which carried, to the Property Accounting Office, Bureau of Supplies and Accounts, for final disposition. The Army has a parallel policy in regard to transfers to the Marines.

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Loose Bottle Caps and Stoppers: The Medical Supply Depots have received many letters from activities complaining of losses in stocks due to loose caps and stoppers. It is therefore requested that all ships, stations and hospitals immediately upon receipt of requisitioned material which includes volatile or hygroscopic drugs, chemicals or solutions, inspect each item of shipment in order to tighten plastic caps or stoppers if it is necessary. (K. C. Melhorn)

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X-Ray Films, Critical Shortage of: Because the available supply of X-ray films is not sufficient to meet the demands reflected in current requisitions, the assistance of the Inspectors of Medical Department Activities has been requested in bringing the matter of conservation of films to the immediate attention of all concerned.

In this connection, attention is again invited to the instructions in Alnav #82 of May 1, 1943, and to the following information supplied recently to the staff of the U. S. Naval Hospital, Chelsea, Massachusetts - a notice which has resulted in a marked reduction in the use of X-ray films in that command:

"To: Medical Officers, U.S.N.H., Chelsea, Mass.
Medical Officers, Outside Referring Activities.

Subj: X-Ray Films, Conservation of.

"Owing to the shortage of films and personnel, the great increase in the work load and the limited facilities available, it is necessary to publish the following information for the guidance and benefit of the hospital medical staff and for all outside referring activities:

"An X-ray examination is a relatively expensive procedure. It should never be employed where the same information is available from a simple physical examination. Stereoscopic and other special film-consuming procedures are not employed unless they are very definitely necessary and arrangements have been made with the X-ray department.

"Incoming request chits are carefully checked. They must be signed by a medical officer and a short concise history pertinent to the X-ray examination is mandatory. Care is exercised to avoid duplications by different members of the same staff. Ambiguously worded chits are returned for clarification, for example, 'X-ray of the spine.' More specificity is demanded.

"When multiple chits for the same patient are received, the X-ray department chooses the proper order such as: a gall bladder study before a gastro-intestinal series; a lumbar spine before a barium enema; and an intravenous pyelogram before a gastrointestinal series. This avoids interference from previously ingested opaque material.

"The question of the left and right side is carefully checked to avoid X-raying the wrong side.

"The referring doctor states the information that he desires, but the X-ray department determines the type of examination, the preparation, the number and size of the films, and the necessary views. Should a diagnosis

be established before the end of the examination, it is terminated and films are saved which would otherwise have been used.

"Fluoroscopy, with a small spot-film device, is used extensively, especially for gastrointestinal series, barium enemas, foreign body localization and spinograms. This permits visualization of the pathological area and its recording on the smallest possible film and in the optimal views. In repeat examinations, fluoroscopy without films is used to obtain information as to progress, such as: a change in the amount of pleural fluid, or a change in the position of the fracture or foreign body fragments. Fluoroscopy thus affords immediate information.

"Activities referring patients are advised to transfer recent and old X-ray films along with the patient. This procedure very often obviates X-ray re-examination and conserves time in establishing disposition.

"No films are used in cases where they obviously will not be productive of any information, such as: (1) In cases improperly prepared (for a K.U.B. X-ray or a barium enema without previous preparation by cleansing enema or for a gastro-intestinal series after having breakfast); (2) in cases where the gall bladder dye has been regurgitated; (3) in cases where the patient is excitable, irrational and uncooperative; (4) in instances at the bed-side where examination has previously always been unsatisfactory.

"The X-ray department contributes to the conservation of films by the following procedures:

"1. Patients are instructed to remove interfering objects, such as: removable dentures, hair pins, ear rings, chains about the neck, etc.

"2. Only qualified experienced technicians are permitted to expose films after a strict adherence to the posted technic charts and only after the proper instruction to the patients as regards breathing, motion, etc.

"3. The dark room staff exercises care to avoid artefacts, exposure to light, and slight negligences which ordinarily spoil many films. Cleanliness and an orderly dark-room system are maintained.

"4. As small a film and as few exposures as practicable are employed. When possible, multiple exposures are made on the same film."

In commenting upon the above notice, the Commanding Officer of the Hospital, Captain Conklin, advised as follows:

"I might add that early during my tour in the South Pacific we received many patients without their X-ray films, these patients having been X-rayed at advanced areas.

"I wrote letters to the various Unit Medical Officers, requesting that X-ray films be transferred with the patients. This procedure was established, thereby saving unnecessary retakes. If this procedure could be established in all combat areas, it would result in a great saving. Once a casualty is evacuated to the rear, there is no object in retaining his films at the front. I have always advocated that either the pertinent X-ray films, or photographic copies, accompany all patients upon transfer."

In this connection the Materiel Division is informed that it is standard practice in the U. S. Army to transmit X-ray films (and clinical cards) with the patient. (Med. Supply News Letter, Dec. 1, '44.)

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Reports of Shortage in Brandy Containers: Reports have been received from several ships advising that a shortage has existed in their supply of Brandy, U.S.P., in 2-oz. bottles, Stock No. S1-2290.

Investigation of the brandy stock on one ship brings out certain facts. The packing slips and labels from brandy stocks forwarded to the Bureau by the U.S.S. (_____) show that this material was in storage a minimum of one year and seven months and a maximum of two years and three months.

Stability tests performed in the laboratory of the Naval Medical Supply Depot, Brooklyn, N. Y., brought out the following information: Caps and Seals Intact (as originally received in depot). Placed in the oven at 100° F. for a period of 10 days: loss 0.41 Gm. to 0.97 Gm. alcohol content. Seals broken and the caps tightened prior to making test as above: loss 0.33 Gm. to 0.58 Gm. alcohol content.

This would indicate that the type closure (plastic screw cap) used during the period of critical shortage of metals is unsatisfactory where it becomes necessary to store volatile liquids in warm compartments or storehouses. Plastic closures tend to expand and contract so that evaporation may occur.

Since plastic closures have proved to be unsatisfactory, all purchase orders of Stock No. S1-2290, Brandy, U.S.P., stipulate that metal screw caps are to be used instead of plastic caps. (Med. Supply News Letter, Dec. 1, '44.)

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Information Relative to Disestablishment of Medical Department Activities:

Ref: (a) Paragraph 3081, Manual of the Medical Department.

For guidance in the decommissioning of Medical Department Activities the following information compiled by Lt. John A. Oley, HC, USN, is published:

Decommissioning, disestablishing or placing in an inactive status any Medical Department activity will require the same attention to details as did the original commissioning. It must be borne in mind that this is the final step. It therefore behooves every member of the Medical Department to accomplish this act with complete thoroughness and dispatch, leaving no loose ends that may require prolonged and unnecessary correspondence with personnel who accomplished the decommissioning and are no longer attached to that activity.

From the date of procurement (receipt) of Medical Department property until the date of its disposition an individual member of the Medical Department is responsible, in a fiduciary capacity, for its custody, be it medical officer, dental officer or hospital corpsmen; and such officer or enlisted man is held responsible for the proper disposition of Medical Department property in his custody (Art. 1194, N.R.)

To aid the individual medical officer, dental officer or hospital corpsman in properly performing the act of decommissioning, the following steps are recommended and should be followed and accomplished in the order given. References when available are given.

1. Preliminary Procedure:

A. Cancellation of all outstanding requisitions.
Requisitions for supplies or services requested by any of the following methods and not yet received:

1. Medical Supply Depots or Storehouses (NavMed Form 4).
2. Stub Requisitions (NavSandA 129) local Supply Officer.
3. Special Purchase Requisitions (NavSandA 76 and 76a ashore; 44 and 44a afloat).
4. Requisitions for Labor (NYO-6).
5. Bureau Work Requests (Special NavMed Form).

Cancellation may be requested by letter or dispatch to the Bureau or activity from which material or services were requisitioned. (Ref: CNO restr. airmailgram, 251947 of 31 Aug 1944.)

B. Liquidation of all outstanding obligations.

Inasmuch as supplemental financial statements from an activity that has been decommissioned are neither feasible nor practicable, every effort must be made to liquidate all outstanding obligations received from any source immediately upon receipt of instructions to decommission, disestablish or be placed in an inactive status.

The financial reports (NavMed Form "B" and "E") should show all transactions as being completed and with no outstanding obligations.

Outstanding obligations for special purchase requisitions and stub requisitions may be cleared by contacting the supply officer through whom the requisitions were processed.

Medical supplies and equipment requisitioned on NavMed Form 4 from Medical Supply Depots or Storehouses may be cleared by requesting the issuing depot or storehouse to furnish NavMed 255 (Invoice).

C. Inventory.

A complete inventory (physical) must be made of all medical department property, both supplies and equipment.

1. Equipment.

Items of equipment may be expended from the ledgers only by approved surveys or transfers directed by competent authority.

Each item of equipment in addition to verification of amounts on hand must be inspected for defects that would render it unfit for reissue and use and/or defects that require only minor repairs before being fit for reissue. Items found to be unfit for reissue, missing or requiring minor repairs must be surveyed.

All items of equipment must be "tagged" with the Stock Number (if listed in the Supply Catalog) and the full name of the item. An item purchased in the open market (Non-Listed Items) will bear the corresponding class listing in which it would ordinarily be carried if it were a Supply Catalog Item, i.e., Surgical Instruments, NL-3, etc. This system of marking and tagging will in a great measure expedite checking and identifying at the receiving activity.

2. Supplies.

After completion of inventory (physical), the Supply Ledger (NavMed Form "W") must be adjusted to reflect the figures actually found on inventory; the differences between the figures shown on the ledger sheet and those actually found to be on hand at the time of inventory will be expended

to "USE" and such expenditure substantiated by NavMed Form "R" with corresponding entries made in the Receipt and Expenditure Journal.

In making inventories of items of supplies, it should be borne in mind that the unit only must be counted and that all broken packages, i.e., less than the full unit, will be disposed of to the nearest Medical Department activity at no cost. In the event that there is no other Medical Department activity in the immediate vicinity this type of material will be packed in a separate container and reported on separate SWPA Form #1 to District Commandant, giving estimated cost.

D. Custody Receipts.

All items of equipment, both Medical Department property and property of other Bureaus or departments should be recalled and Custody Receipts cancelled. Items of equippage (Title "B") received from the supply officer or other departments on a Custody Receipt should be returned to the original issuing activity and the cancelled receipts filed with the permanent records of the Medical Department activity.

E. Surveys.

All items of equipment which are missing, unfit for reissue or broken and requiring only minor repairs shall be surveyed immediately after the physical inventory has been held.

Requests for surveys will be accomplished on NavSandA Form 154. Complete instructions governing survey procedures are contained in Arts. 1906 to 1918, inclusive, U. S. Navy Regulations and pars. 3074 to 3077, inclusive, Manual of the Medical Department.

The request for survey shall be forwarded to the Chief, Materiel Division, Bureau of Medicine and Surgery, Pearl and Sands Streets, Brooklyn 1, New York, and with a memorandum attached thereto explaining the need for immediate action, i.e., decommissioned, disestablished or placed in an inactive status.

2. Disposition of Supplies and Equipment:

A. Activities to whom material will be transferred unless otherwise directed.

All Medical Department supplies and equipment will be reported to District Commandant on SWPA Form #1.

B. Preparation of Forms to Effect Transfer of Material.

Receipt/Expenditure Invoice (NavSandA Form 127) shall be prepared (original and six copies) listing all items being transferred. The items shall

be listed in the manner shown in the Supply Catalog, i.e., Standard Supply Items first, then Supplementary Items and lastly "Non-Listed" Items (NL). Prices at which the material is carried on Ledger sheets (NavMed Form "W") will be used; in the event that material was received at no cost, an estimated cost must be entered on transfer invoice. A separate transfer invoice will be prepared for items that were surveyed with recommendation that they be disposed of by transfer to the nearest Medical Supply Depot or Storehouse.

The following disposition will be made of Receipt/Expenditure Invoice (NavSandA 127):

1. Copies 1, 2, 3, 5, and 6 with the bill of lading will be mailed to the receiving activity with instructions to acknowledge receipt and forward receipted copies 1, 2 and 3 to BuMed, Materiel Division, Brooklyn 1, New York.

2. Copy 4 will be forwarded by the preparing activity to BuMed, Materiel Division, Brooklyn 1, New York.

3. Copy 7 will be packed with the property being shipped.

4. Copy 8 will be retained by the shipping officer.

C. Packing and Shipping.

Unless otherwise directed, arrangements should be made with the local supply officer for the packing and shipping of material being transferred. In the event that a local supply officer is not available, the supply officer at the nearest naval activity should be contacted. Shipment of this material is authorized by Paragraph 1208, NMR & DA Handbook.

Owing to the fragility and delicate construction of most items of medical equipment, the packing of these materials must be left to experienced packers. All items of glassware and drugs contained in glass containers require special packing with sufficient bulk packing to avoid unnecessary breakage.

A copy of the Receipt/Expenditure Invoice (NavSandA 127) must be packed with the material by the supply officer. The case in which this copy has been placed shall be marked "INVOICE IN THIS CASE".

Resume: All disposition of activity excess must be referred first to the District Commandant on SWPA Form #1.

All transfers of property will be made on NavSandA Form 127 which form must bear the following statement on its face: "Transfer of property effected without transfer of funds."

3. Preparation of Final Financial Reports.

A. NavMed Form "B" (Report of Allotment Expenditures and Obligations).

Except when expenses have been incurred or obligated under the authority of an annual or specific requisition approved by BuMed or Senior Officer Present in an emergency, this form has been discontinued for the below listed activities (Ref: ALNAV 77, 12 April 1944):

1. All Ships, including Hospital Ships.
2. All Marine-Corps and Construction-Battalion organizations outside continental United States, including those in Alaska and Hawaii.
3. All shore based activities outside continental United States, where Advance Base Accounting Procedures as prescribed by BuS&A are in effect, except NavMed Supply Depot, Pearl Harbor; Yard Dispensary, Navy Yard, Pearl Harbor; Base Hospital No. 8 and NavHospital, Aiea Heights, Pearl Harbor, Balboa, C.Z., Coco Solo, San Juan, Puerto Rico and Trinidad, B.W.I.

This form should be prepared and dated as of the decommissioning date by all activities having one or more allotments (activities above excepted except when expenses have been incurred or obligated). (See BuMed Circ. Ltr. F, App. D. Manual of the Medical Department, for detailed instructions for preparation of NavMed Form "B".

B. NavMed Form "E" (Receipts and Expenditures).

Not to be submitted by ships or extracontinental shore activities. (Ref: ALNAV 186 of 5 Sep 1942). To be submitted from shore activities in continental United States. (See BuMed Circ. Ltr. F, App. D, Manual of the Medical Department for detailed instructions for preparation of NavMed Form "E".

As in the Supplies and Equipment Ledgers (NavMed Form "W") there should be NO remaining balance of either supplies or equipment (money value) in that the transfer of all remaining items (effected on NavSandA Form 127) will reflect on this report. . .

C. Closing "Receipt and Expenditure" Journal.

No balance (money value) should remain in either the equipment or supplies section of this Journal after entry of final transfer voucher or approved surveys.

D. Closing Supplies and Equipment Ledgers (NavMed Form "W").

After final entry from transfer vouchers or approved surveys, no item of equipment or supplies should remain in either the supplies or equipment ledger, and no money value should reflect on ledger pages or recapitulation sheets.

To accomplish the above the importance of an accurate physical inventory is again stressed, so that the verification of amounts on hand is reflected on appropriate ledger sheets in correct amounts as inventoried, and transposed eventually to NavSandA 127 or 71 for final disposition.

Medical Department Reports and Returns on Decommissioning Other Than Financial

All reports, letters, etc., submitted routinely to BuMed will again be prepared and submitted to BuMed on date of decommissioning with a notation across the face of the report to the effect that this is the final report due to decommissioning, etc.

Disposition of Accounting Files and Records

With regard to the disposition of accounting files and records upon decommissioning attention is invited to BuMed Ltr: H3-4EN(073-40) of 11 Aug 1944; the following is quoted from the above reference:

"Upon decommissioning of a Medical Department activity, the correspondence files and records shall be properly arranged, packaged in numbered boxes or other suitable containers (numbering of boxes to obtain reference to total boxes of shipment thus: Box No. 1 of 20, Box No. 2 of 20, etc.) and each box and container inventoried. Inventories shall be prepared in triplicate; one copy to be placed in appropriate box or container, one copy to be transmitted to the Naval Records Management Center, Eastern Division, 253 North Broad Street, Philadelphia 7, Pennsylvania, and one copy to be transmitted to the Bureau of Medicine and Surgery. After records have been packaged and inventoried, a letter of notification shall be prepared and sent airmail to the appropriate Naval Records Management Center. This letter shall state the approximate cubic footage and the general character of the records to be transferred and shall also have attached copies of inventories of the various record containers. Carbon copies of the letter of notification and inventories shall be transmitted to Bureau of Medicine and Surgery. The packaged records may then be shipped to the Naval Records Management Center." (Med. Supply News Ltr, Dec. 1, '44.)

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Catalog of Training Films: A catalog of medical training films has been issued by the Bureau of Medicine and Surgery. A copy has been issued to each naval medical activity and to the medical officer of each major naval activity. Further copies may be obtained upon application to the Bureau. (Res. Div., BuMed - D. F. Smiley)

Public Health Foreign Reports:

Disease	Place	Date	Number of Cases
Plague	Algeria, Algiers	Sept. '44	29 (5 fatal)
	Belgian Congo	Sept. 11-16, '44	2 (fatal)
		Sept. 23-30, '44	5 (fatal)
	Bolivia	Aug. '44	8 (1 fatal)
	Brazil	Jan. 1-Mar. 31, '44	89 (17 fatal)
		Apr. '44	5
	Br. East Africa, Kenya	Sept. 16-23, '44	5 (1 fatal)
	Fr. West Africa, Dakar	Oct. 1-7, '44	19 (15 fatal)
	Madagascar	Aug. '44	11 (9 fatal)
	Palestine	Sept. 23-30, '44	5
	Protugal	Oct. 7-14, '44	3
	Senegal	Sept. 11-20, '44	8 (7 fatal)
	Tunisia	Oct. 14-21, '44	1 (fatal)
	Union of So. Africa	Oct. 4, '44	13 (fatal)
Smallpox	Bolivia	Aug. '44	180 (57 fatal)
	French Guinea	Sept. 11-20, '44	73 (4 fatal)
	Mexico	Aug. '44	277
	Turkey	July '44	78
	Union of So. Africa	July '44	217 (35 fatal)
	Venezuela	Sept. '44	54
Typhus Fever	Algeria	Aug. 11-20, '44	12
		Sept. 1-10, '44	18
	Bolivia	Aug. '44	26 (4 fatal)
	Egypt	Sept. 9-16, '44	46 (7 fatal)
	Fr. West Africa, Dakar	Aug. '44	16
	Hungary	Sept. 2-9, '44	21
	Mexico	Aug. '44	109
	Rhodesia (Northern)	Aug. 12-19, '44	10
	Tunisia	Sept. 11-30, '44	60
	Turkey	July '44	210
	Union of So. Africa	May-July '44	1,047 (312 fatal)
	Cape Province	Aug. '44	283 (13 fatal)
	Venezuela	Sept. '44	10 (1 fatal)
Yellow Fever	Belgian Congo	Mar. 4-11, '44	1 (fatal)
	French Guinea	Oct. 6, '44	1 (fatal, suspected)
	Gold Coast	July 22-29, '44	1
		Sept. 28, '44	1 (fatal)
	Venezuela	Sept. 6-15, '44	3
		Sept. 27, '44	2

(Pub. Health Reps., Oct. 27 & Nov. 10, '44.)

To: All Ships and Stations. BUMED-RL-JRMcK
P2-5/P19-1(094)

Subj: Physical Examination Prior to Release from Active Duty or Discharge from the Naval Service. 30 Oct 1944

Refs: (a) Pars. 1525, 1527(d), and 1529, Manual of the Medical Department.
(b) BuMed-BuPers joint ltr., BuMed P16-3/P19-2(081-40), Pers-66-MSW, P19-2, of 27 May 1944; N.D. Bul. of 15 Jun 1944, 44-702.
(c) BuMed ltr Rl-OIM, P3-3/P3-1(054-40), of 13 Jun 1944, Subj: Roentgenographic Examinations of the Chests of Navy and Marine Corps Personnel; N.D. Bul. of 30 Jun 1944, 44-741.
(d) BuMed ltr P2-5/QR(093), R-VC, of 8 Aug 1942, Subj: Physical Examinations of Members of the U. S. Naval and Marine Corps Reserve Upon Release from Action Duty; N.D. Bul. Cum. Ed. 1943, p. 442.

1. In view of the many Federal benefits which are contingent upon disability incurred in the line of duty, it is now even more important than ever before that members of the naval service be given a complete and thorough physical examination before they are released from active duty or discharged from the service.

2. Attention is therefore invited to the instructions in the Manual of the Medical Department relating to these examinations which are quoted here for ready reference:

Par. 1525. Physical Examination of Officers and Warrant Officers Prior to Resignation, Discharge, or Dismissal. - In general, the same as prescribed for enlisted men prior to discharge or retirement except that officers (not including midshipmen) and warrant officers shall appear before a board of medical examiners. The examination may be conducted at a naval hospital if the officer so elects. The report on Form Y shall be submitted to the Bureau. Whenever physical defects are discovered which may have serious import, the officer shall be transferred to a naval hospital for medical survey. This is considered necessary for the protection of individual officers and their dependents as well as the Government.

Par. 1527(d). Examination of Nurses Prior to Release from Active Duty. - Before a nurse leaves her station for release from active duty, a physical examination shall be held. In case physical disability is found, the nurse must be examined by a board of medical survey before being released from active duty.

Par. 1529. Physical Examination of Enlisted Men Prior to Discharge or Retirement. - Every enlisted man not discharged for physical disability shall be given a thorough physical examination by a medical officer, when

such officer is available, within a period of 72 hours prior to his discharge or retirement from active service. Whenever practicable, each man should be examined by two medical officers. A careful record of all physical defects, however trivial, and other data shall be made in the health record. In case physical disability sufficient to disqualify for reenlistment or for continuation in the service is found, the individual must be examined by a board of medical survey before discharge or release from active duty.

3. The Bureau desires to reemphasize the importance of these examinations and hereby directs that no person be released from active duty or discharged from the service without first having been thoroughly examined by at least one medical officer. The examinations should, if practicable, be conducted by a board of two or three medical officers. The results of the examination should be carefully recorded in the medical record and BuMed Form Y prepared and forwarded to the Bureau in all cases except those discharged from the service upon recommendation of boards of medical survey.

4. If, during the course of such an examination, a person is found to be in need of medical attention or hospitalization, he shall not be released from active duty or discharged from the service until satisfactory arrangements have been made for his continued treatment and hospital care. No one in an active-duty status shall be released from active duty or placed on the retired list by reason of physical disability except upon the approved recommendation of a board of medical survey (see ref. (b)).

5. In this connection, attention is invited to paragraph 4 of ref. (c) which directs that "Roentgenographic examination of the chests of all naval and Marine Corps personnel shall be made during the physical examination at the time of release from active duty or discharge from the service unless such an examination has been made during the previous 6 months." The instructions in paragraphs 7 and 8 of ref. (d) are also pertinent to the subject of this letter and should be reviewed. --BuMed. Ross T McIntire.

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To: All Ships and Stations. BUMED-D-HM P5-2(104-42)

Subj: Dental Treatment Rendered Personnel of United Nations Eligible for Receipt of Lend-Lease Aid. 8 Nov 1944

Refs: (a) BuMed ltr P5-2(102), D-HGB, of 17 Jun 1943, N.D. Bul. Cum. Ed. 1943, p. 478.
(b) BuMed ltr P5-2(102), D-HGB, of 8 Mar 1944; N.D. Bul. of 15 Mar 1944, 44-293.
(c) Manual of the Medical Department, par. 274(c).

Encl: (A) Copy of Alnavsta 301230, of 30 Apr 1943, re medical care of personnel of any of the United Nations eligible for lend-lease aid.

1. Enclosure is clarified herewith relative to furnishing and reporting dental treatment.

2. Dental treatment in naval activities with dental facilities is to be made available to personnel of United Nations eligible for receipt of lend-lease aid on the same basis as to United States personnel where it is impracticable for the Allied Nations themselves to arrange for such care.

3. Correct reference (a) by adding to paragraph 2 after "Coast Guard on active duty" the following: "and of armed forces of United Nations eligible for receipt of lend-lease aid."

4. Ships and stations having naval dental facilities shall report dental treatment of United Nations personnel not incident to hospitalization as follows:

(a) Prosthetic treatment. - Submit NavMed Form L, suitably marked in each case to indicate the nationality of the recipient, to BuMed with those recording treatment of United States personnel as outlined in references. No special reporting of such forms in the letter of transmittal is required.

(b) All other treatment. - Submit with NavMed Form K a supplement entitled DENTAL TREATMENT - UNITED NATIONS PERSONNEL, consisting of separate lists for each country denoting name, rank or rating, date, and treatment in each case for the period reported. For simplicity and brevity, all treatment, regardless of its detailed nature, shall be recorded within the following classification: (1) restoration, (2) extraction, (3) surgery, (4) treatment. Details are not required. An example is given below:

\- -

(Ship or Station)

Supplementary NAVMED-K Month ending_____

DENTAL TREATMENT - UNITED NATIONS PERSONNEL (country)

(Name)	(Rank or rating)	treatment - postoperative	(Date)
"	"	restoration - silicate (1)	"
"	"	extraction - (2)	"
"	"	surgery - cystectomy	"

The numbers refer to the number of restorations, etc., not to location.

5. No reports are desired re dental treatment provided United Nations in-patients of hospitals. However, the monthly dental prosthetic letter described by reference (c) shall include a general statement as to the number and types of prostheses furnished as an incident to hospitalization.

--BuMed. Ross T McIntire.

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Enclosure (A)

M&S 3055 To:
From: The Secretary of the Navy ALNAVSTA Priority
Released by: Frank Knox
Date: April 30, 1943

301230

Provisions of ALNAVSTA 301900 November nineteen forty-two which made available naval appropriations to cover cost of medical treatment hospitalization transportation of remains and burial of British personnel hereby extended to include personnel of any of the United Nations eligible for receipt of lend lease aid X Refer Navy Department semimonthly bulletin for list eligible nations X In case of death notify individuals commanding officer comma nearest consular agent or other representative of nation concerned and request instructions as to disposition of remains X Uniforms or funeral flags if required should be requested from representative of nation concerned X these provisions retroactive to March first nineteen forty-three

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To: All Ships and Stations. BUMED-TWS-GB
A10-3/FS(111)

Subj: Bureau of Medicine and Surgery Publications, Blank Forms, and Circular Letters Furnished to Naval Vessels - Information Concerning. 11 Nov 1944

1. Requests from naval vessels undergoing construction or conversion for publications furnished by the Bureau of Medicine and Surgery have reached a large volume. As many as four requests have been received for publications for the same vessel, all prior to commissioning: one from the fitting-out activity, one from the commissioning detail, one from the senior officer of the crew detail, and one from the prospective commanding officer. All of these requests require an answer. The following information is furnished in the hope that a reduction of paper work will result with the elimination of these unnecessary requests:

(a) At present a Manual of the Medical Department, USN; one or more copies of the Handbook of the Hospital Corps, USN; medical books (number determined by complement); and an adequate supply of NavMed blank forms are included in the medical commissioning outfit for vessels to which a standard 50 complement medical commissioning outfit, or larger, is issued.

(b) Beginning this date a Manual of the Medical Department, USN, and one copy of the Handbook of the Hospital Corps, USN, will be included in the medical commissioning outfit issued to PCS's, SC's, YMS's and LCI(L)'s.

(c) BuMed circular letters to all ships and stations in effect on 31 December 1943 were printed in the Navy Department Bulletin Cumulative Edition. This publication is furnished without request by the Publications Division, Administrative Office, Navy Department, to vessels when they are placed on the Standard Navy Distribution List. Subsequent BuMed circular letters are to be found in the semimonthly issues of the Navy Department Bulletin furnished all activities on the Standard Navy Distribution List.

(d) District and yard craft do not require BuMed publications or NavMed blank forms. For Medical Department purposes such craft will be included in

the reports of the Medical Department activity at the district, yard, base or tender to which attached.

(e) It is not necessary to request that a vessel be placed on BuMed's mailing list. Any publication, pamphlet, or letter, other than those listed above, considered pertinent to the Medical Department on board is mailed to all vessels listed in Part I of the Standard Navy Distribution List.

2. In view of the above, individual copies of BuMed publications and circular letters will no longer be furnished to commanding officers, prospective commanding officers, or officers in charge of naval vessels.

3. Vessels in commission, not having a Manual of the Medical Department, USN, or a Handbook of the Hospital Corps, USN, on board may request one by submitting NavMed Form 4 to Naval Medical Supply Depot, Brooklyn 1, New York, or Oakland 4, California, making reference to this letter and stating that copies have not been received.

4. Commanding officers of commissioning details are requested to make the contents of this letter available to prospective commanding officers in their respective areas. --BuMed. Ross T McIntire.

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To: All Ships and Stations. BUMED-O-EFB
A9-3/S37-2(101)

Subj: Quarterly Dental Report, Personnel, Equipment, and Facilities (NavMed 461) - Establishment of. 8 Nov 1944

Encl: (A) Sample copy of subject form.

1. In order to obtain such pertinent information as will allow the Bureau of Medicine and Surgery to make adequate plans in regard to dental personnel, equipment, and facilities for dental activities in the field, subject report (Encl. (A)) has been authorized. It is expected that subject report will serve a very real purpose in planning for the best possible utilization of dental facilities in the U. S. Navy.

2. It is therefore directed that the enclosed form be completed by the senior dental officer of each Medical Department activity having dental facilities at the close of each quarter (i.e., 31 Dec, 31 Mar, 31 Jun, 30 Sep). Reports shall be returned, via official channels, to the Office of Inspector of Dental Activities, Bureau of Medicine and Surgery, Potomac Annex, Navy Department, Washington 25, D. C.

3. A supply of blank forms will be furnished each dental activity. This form will be added to the list of blank forms available at the Supply Depot.
--BuMed. Ross T McIntire.

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QUARTERLY DENTAL REPORT
PERSONNEL, EQUIPMENT, FACILITIES
NAVMED-461 (REV. 11-44)

INSTRUCTIONS

1. The Senior Dental Officer shall submit Quarterly this form (typewritten) via official channels to the Inspector of Dental Activities, Bureau of Medicine and Surgery, Navy Department, Washington (25), D.C. for consideration in determining the adequacy of dental facilities. (To be forwarded in triplicate).

2. Information contained is essential to Inspection, Materiel and Dentistry Divisions of the Bureau of Medicine and Surgery.

NAME OF ACTIVITY | PERIOD ENDING

DENTAL PERSONNEL

1. OFFICER

	DENTAL						OTHER					
	CAPT.	COMDR.	LT. CDR.	LIEUT.	LT. (jg)	TOTAL	HC	PHARM.	NNC	HYGN.	OTHER	TOTAL
COMPLEMENT AUTHORIZED												
PERSONNEL ATTACHED												
PERSONNEL REQUIRED												
GENERAL DENTISTRY (only)												
PROSTHODONTIA (only)												
SURGERY (only)												
EXAMINATIONS (only)												
PROPHYLAXIS (only)												
SUPERVISOR (only)												
SUPER. ASST. (Advisory only)												

2. ENLISTED

	GENERAL DGT						PROSTHETIC - DPT AND (DP)					
	C.P.O.	1C	2C	3C	OTHER	TOTAL	C.P.O.	1C	2C	3C	OTHER	TOTAL
COMPLEMENT AUTHORIZED												
PERSONNEL ATTACHED												
PERSONNEL REQUIRED												
ATTACHED WAVES (only)												
ATTACHED (DP's) (only)												
ATTACHED TRAINEES												

3. IS AUTHORIZED COMPLEMENT SUFFICIENT TO REASONABLY ACCOMPLISH THE MISSION OF THE DENTAL DIVISION? ☐ YES ☐ NO

ARE DENTAL PERSONNEL UTILIZED IN SINGLE OR DOUBLE SHIFT? ☐ SINGLE ☐ DOUBLE

4. IS PROSTHETIC FACILITY ATTACHED TO THE DENTAL DIVISION? ☐ YES ☐ NO

HAS IT BEEN AUTHORIZED? ☐ YES ☐ NO

IS AUTHORIZATION PENDING? ☐ YES ☐ NO

5. IF NOT, IS PROSTHETIC FACILITY URGENTLY NEEDED? ☐ YES ☐ NO

IF NOT, WHAT IS THE DISTANCE IN MILES TO THE NEAREST PROSTHETIC FACILITY THAT IS IN A POSITION TO OFFER PROSTHETIC TREATMENT TO THE PATIENTS? *(Miles)*

CAN THIS PROSTHETIC FACILITY ACCEPT ALL THE PATIENTS YOU MAY REFER? ☐ YES ☐ NO

IS ADEQUATE TRANSPORTATION AVAILABLE FOR SUCH PATIENTS AS CAN BE ACCEPTED BY PROSTHETIC FACILITY TO WHICH REFERRED? ☐ YES ☐ NO

IF THE DENTAL DIVISION HAS A DENTAL PROSTHETIC FACILITY, WHAT IS AVERAGE NUMBER OF CASES YOU CAN RECEIVE AND COMPLETE PER MONTH OTHER THAN THOSE FROM THE IMMEDIATE COMMAND?

6. WHEN WAS THE LAST SHIPMENT OF PRECIOUS METAL SCRAP DATED? *(Date)*

7. HAVE YOU ANY SPECIFIC ARRANGEMENTS FOR RECEIVING CASES FROM SHIPS TEMPORARILY IN PORT? ☐ YES ☐ NO

8. HAVE YOU VITALLIUM, TICONIUM OR SIMILAR CASTING EQUIPMENT? ☐ YES ☐ NO

9. IS THE PRESENT OR AUTHORIZED PROSPECTIVE FACILITY (Building) ADEQUATE? ☐ YES ☐ NO

IS THE PRESENT OR AUTHORIZED PROSPECTIVE EQUIPMENT ADEQUATE? ☐ YES ☐ NO

10. WHAT WAS THE AVERAGE COMPLEMENT FOR THE PAST MONTH OF THE COMMAND OF WHICH THE DENTAL DIVISION IS A PART?

APPROXIMATE TURNOVER OF COMPLEMENT

11. ARE YOU CALLED UPON REGULARLY TO RENDER DENTAL TREATMENT TO THE PERSONNEL OF ANY OTHER SHORE COMMAND THAN THE ONE TO WHICH YOU ARE ATTACHED? ☐ YES ☐ NO

IF YES, NAME EACH SUCH COMMAND WITH AVERAGE COMPLEMENT OF EACH FOR THE PREVIOUS MONTH

12. TO THE COMPLEMENTS OF HOW MANY SHIPS HAVE YOU RENDERED DENTAL TREATMENT DURING THE PAST MONTH?

13. COLLATERAL DUTIES OF DENTAL OFFICERS

AMOUNT OF TIME CONSUMED WEEKLY BY THESE DUTIES

14. **SPACES ALLOTTED DENTAL FACILITY** *(check)*

WAITING ROOM	☐	DENTAL OPERATING ROOM	☐	PROSTHETIC LAB.	☐
STOREROOM	☐	SENIOR DENTAL OFFICER'S OFFICER	☐	OTHER ACCESSORY SPACES	
RECORD OFFICE	☐	LOCKER ROOM	☐		

15. **DENTAL EQUIPMENT** *(Specify make of * items)*

	SENIOR UNITS *	JUNIOR UNITS *	CHAIRS *	CABINETS *	X-RAY UNITS *	AIR COMPRESSOR *	AUTOCLAVE *	FIELD SET OPERATIVE	FIELD SET PROSTHETIC
(a) ON HAND - INSTALLED									
(b) ON HAND - AWAITING INSTALLATION									
(c) EQUIPMENT UNDER S.D. REQ. NOT YET RECEIVED									
(d) PROSPECTIVE DATE OF INSTALLATION OF (b)									

SPECIFY VOLTAGE, CURRENT, CYCLE

SPECIFY GAS SUPPLY OF STATION

IF ANY OF THE ABOVE EQUIPMENT IS INSTALLED IN OTHER THAN MAIN ACTIVITY, STATE GEOGRAPHIC LOCATION IN EACH INSTANCE.

REMARKS: While the above questions are expected to bring out desired information, if the answers to either or both of the questions (9) and (10) are "NO", complete information should be added below using additional sheets, if necessary. Any large authorized prospective change in the personnel of your command should be noted and it should be stated whether necessary increases in plant (building) equipment and dental personnel (officer and enlisted) have been requested and authorized.

(Signature of Senior Dental Officer)

1st Endorsement

TO: Commanding Officer

1. Forwarded:

(MC) USN
(Medical Officer)

2nd Endorsement

TO: Inspector of Dental Activities

1. Forwarded:

USN
(Commanding Officer)

To: All Ships and Stations. Op13-1C-jc
Serial 404113
Subj: General Order No. 211 - Advance Copy. 27 Nov 1944

Encl: (A) Copy of General Order No. 211.

1. General Order No. 211 is promulgated in advance of printed copy.
--OpNav. W. S. Farber.

ENCLOSURE (A)

GENERAL ORDER Navy Department
NO. 211 Washington, D. C.

DISPOSITION OF NAVAL PERSONNEL WHO REFUSE MEDICAL, DENTAL, OR SURGICAL TREATMENT IN TIME OF WAR

1. Members of the naval service who refuse to submit to medical, dental or surgical measures necessary to keep them fit to perform their duties shall be handled in accordance with the following directions.

2. The senior medical officer of a ship or station, after consultation with other medical or dental officers, if available, and with the approval of the commanding officer, shall, where in his judgment the best interests of the individual or of the service require, take the following measures without the consent and over the protest of the individual concerned:

(a) Administer authorized immunization and prophylactic measures for the prevention of disease.

(b) Proceed with routine diagnostic measures and other special tests and examinations except in those cases where for any reason the procedure would entail unreasonable risk of injury or by its nature be difficult of performance without the patient's voluntary cooperation. The practice contemplated may be illustrated by the examples noted below.

(Compulsion permissible - examples: Kahn and Bogen tests, ordinary X-rays, dermal reaction tests, lumbar puncture, taps of body fluids, catheterization, electroencephalography, ordinary physical examination, etc.)

(Compulsion not permissible - examples: Exploratory surgery, surgical biopsy, introduction of lipiodol into spinal canal, bronchoscopy, cystoscopy, ventriculography, presence of substantial contraindications arising from idiosyncrasy or poor condition of patient, etc.)

Refusal of these measures may, however, be unreasonable under the tests specified in paragraph 5 and so constitute a breach of discipline.

(c) Administer usual and customary medical or dental treatment for contagious or communicable diseases.

(d) Perform emergency surgery necessary to protect health or life if the patient is mentally incompetent from psychiatric causes or from the effects of his disease or condition.

3. Persons who unreasonably refuse routine medical, dental or surgical treatment for minor or temporary disabilities shall be reported to the commanding officer for disciplinary action. This is intended to include commonplace cases involving little or no risk to the patient where it is inexpedient and unnecessary to transfer the patient to a naval hospital. The senior medical officer, in determining whether the patient's refusal of the procedure is unreasonable, shall do so after consultation with other medical or dental officers, if available, and after due consideration of the man's condition, his reasons for refusal, and such tests as those indicated in paragraph 5. Special cases may, if considered desirable, be reported to the Bureau of Naval Personnel or Commandant, U. S. Marine Corps, via the Bureau of Medicine and Surgery, for further instructions.

4. Members of the naval service who refuse to submit to medical, dental or surgical procedures shall, with the exceptions noted in paragraphs 2 and 3, be transferred to a naval hospital for further observation and disposition.

5. Patients transferred to a naval hospital in accordance with these instructions, shall, following their arrival at the hospital, be brought before a board of medical survey consisting of not less than three medical officers who shall study the case, inquire into the merits of the individual's refusal to submit to treatment, and report the facts with their recommendation to the Bureau of Naval Personnel, or Commandant, U. S. Marine Corps, via the Bureau of Medicine and Surgery.

(1) In surgical cases, the board's report should contain the answers to the following questions:

(a) Is surgical treatment required to relieve the incapacity and restore the individual to a duty status and may it be expected to do so?

(b) Is the proposed surgery an established procedure that qualified and experienced surgeons would ordinarily recommend and undertake?

(c) Considering the risks ordinarily associated with surgical treatment, the patient's age and general physical condition, and his reasons for refusing treatment, is the refusal reasonable or unreasonable? Mere fear of surgery or religious scruples in such cases are not to be considered.

(2) If the individual concerned has refused a medical, dental or diagnostic measure, the board of medical survey should answer similar inquiries designed to show need and risk of the procedure.

6. As a general rule, refusal of minor surgery should be considered as unreasonable in the absence of substantial contraindications. Cases of major surgery require most careful individual appraisal. Refusal of such operations may be reasonable or unreasonable, according to the circumstances of the particular case. In such cases, the age of the patient, any existing physical contraindications, previous unsuccessful operations, and any special risks should be taken into consideration.

7. As a matter of policy, surgery shall not be performed on a person over his protest if he is mentally competent. This does not mean that he should not be subjected to disciplinary action for refusal to submit to surgery if his refusal is determined to be unreasonable.

8. If a board of medical survey decides that a diagnostic, medical, dental or surgical procedure is indicated, these findings must be made known to the patient and the board's report shall show that he was afforded an opportunity to submit a written statement explaining the grounds for his refusal. If such a statement is submitted, it shall be forwarded with the board's report. The patient should be advised by the board at this time that his continued refusal may lead to disciplinary action. Even if his disability originally arose in line of duty, its continuance would be attributable to his unreasonable refusal to cooperate in its correction. The continuance of the disability should therefore be considered as due to the individual's own misconduct and as "not in line of duty" from and after the time of his unreasonable refusal.

9. If, after review by the bureaus and offices concerned, it is concluded that the individual's refusal is unreasonable, the Chief of Naval Personnel, or Commandant of the Marine Corps, in case of Marines, will order trial by court martial or such other action as may be warranted.

James Forrestal. Secretary of the Navy.

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To: All Ships and Stations. BUMED-Y-vh
A3-3/EN10(104-40)

Subj: Service Number, Use of on Form Fa (Individual Statistical Report of Patient). 20 Nov 1944

1. It is directed that in the preparation of NavMed Form Fa Cards (Individual Statistical report of Patient), the file (serial) number of officers, Navy and Marine Corps, or the Service number of enlisted personnel, Navy and Marine Corps, be entered in the right-hand side of the block of line 1.

2. In order to facilitate this procedure, it is further directed that the file or serial number of officers and enlisted personnel be written on the outside of the cover of the Health Record. --BuMed. Ross T. McIntire.

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To: All Ships and Stations. PERS-66-HEB
P16-3/MM
BUMED
P16-3/MM/1034-43

Subj: Enlisted Personnel of the Active List Disabled for General Service, Disposition in the Case of. 21 Nov 1944

Refs: (a) BuMed-BuPers jt ltr of 28 Oct 1942; N.D. Bul. Cum. Ed. 1943, p. 1162.
(b) BuPers-BuMed jt ltr of 30 Mar 1944; All Ships and Stations Letters - Jan-Jun 1944, p. 741.
(c) Par. 1529, Manual of the Medical Department.
(d) BuPers ltr Pers-6303-DW-12, P16-3/MM, of 27 May 1944.
(e) Joint Regulations of the Secretary of War, the Secretary of the Navy, and the Administrator of Veterans' Affairs to Implement Sections 103 and 200 of the Servicemen's Readjustment Act of 1944 - Instructions for Complying With, of 10 Aug 1944; N.D. Bul. of 31 Aug 1944, 44-960.

1. Reference (a) is hereby canceled.

2. So long as the provisions of Public Law 337, 77th Congress, approved 13 Dec 1941, remain in effect, enlisted men of the Regular Navy, including USN-1, and Naval Reserve, who are not physically qualified to perform all the duties of their rating because of disabilities resulting from wounds received in action or disease incurred in combat areas, may be retained in the naval service on active duty for the convenience of the Government and assigned to limited duty commensurate with their physical qualifications under the following conditions, determination of which shall be made in each case:

(a) The man's services are desired, and his record is favorable.

(b) Disability is of such a nature as not to interfere with his performing useful duty.

(c) Retention on active duty is not likely to aggravate his disability.

3. Men who are not physically qualified to perform full duty because of disability resulting from wounds received in action but who are considered physically qualified for limited duty shall be informed that they are being recommended for retention on limited active duty. If the individual concerned does not desire to remain in the service, or if such individual is a Fleet Reservist or retired enlisted man and does not desire to remain on active duty, a statement to that effect will be obtained from him and forwarded along with the report of medical survey.

4. Men who have become disabled for general service by reason of disease incurred in combat areas normally may be retained in the naval service and assigned to limited duty in accordance with conditions specified in paragraph 2 above. This action may be desirable inasmuch as retention is considered advisable for eventual reevaluation after further treatment or rehabilitation measures.

5. Those men retained on active duty in accordance with the foregoing shall:

(a) Be eligible for advancement in rating.

(b) If Regular Navy men, be eligible for transfer to the Fleet Reserve upon completion of required service.

(c) If Regular Navy men, not be discharged at expiration of enlistment with a view to immediate reenlistment, until waiver of the physical defect has been approved by the Bureau of Naval Personnel.

(d) If they become unable to carry on their duties, or when their services are no longer required, be brought before a board of medical survey for report and recommendation as to disposition.

(e) Be reexamined upon own request, or at any time that it may appear desirable, with a view to restoration to a full duty status.

6. Reports of medical surveys in the cases contemplated above shall include a statement as to whether the individual's disability is of such a nature as to interfere with his performing useful duty and whether his retention would be likely to result in aggravation of his disability; outline the limits of duty of which the individual is capable; and state whether or not he desires to remain in the naval service on active duty.

7. Men, other than those referred to above, found by a board of medical survey to be not physically qualified for all the duties of their rating will normally be

discharged from the naval service except in certain unusual cases.

8. The following disposition will be made of enlisted personnel on active duty who have been classified for limited duty only as a result of physical disability:

(a) It is directed that with the exceptions noted in paragraphs 2, 3 and 4, above, and with the exceptions of individuals classified for special assignment only, all enlisted personnel who have been classified for limited duty only as a result of physical disability, be reexamined at the earliest opportunity with a view to determining their fitness for full duty.

(b) Those enlisted men who are found physically qualified for full duty shall be disposed of as provided for in paragraph 18 of reference (d) and a report of physical examination forwarded as provided for in paragraph 8, reference (b). It is desired that medical examiners be very careful in their interpretation of physical fitness for full duty giving due attention to the individual's age, rate, service experience, mental attitude, etc. It is particularly important that men not be returned to full duty status where they might be sent to sea or foreign shore duty if their physical condition is such that they are unlikely to render full service in their rating.

(c) Those enlisted men who are found not physically qualified for full duty must be examined by a board of medical survey before discharge or release from active duty, in accordance with the provisions of reference (c). This is particularly important in view of the Veterans' Administration benefits, the income tax benefits, and the other services provided which relate to rehabilitation, civil readjustment, and reemployment of disabled or partially disabled ex-servicemen. It is therefore directed that such men be brought before a board of medical survey for full appraisal of the present status of their disabilities with a view to separation from active service. It is desired that, whenever possible, these men be brought before a board of medical survey at their station of duty. This shall not preclude hospitalization of those individuals currently in need of hospital treatment, or of those who require special rehabilitation measures because of physical disability.

(d) Those individuals who are retained at their duty station for medical survey may be returned to limited duty while awaiting the Bureau of Naval Personnel's action upon the report of medical survey. In the event their discharge from the service by reason of physical disability is directed by the Bureau of Naval Personnel, commanding officers concerned shall carry out all required naval procedures with a view that such individuals may derive all the benefits to which they are entitled from the Veterans' Administration, such rehabilitation as the individual may need, and such social, vocational, and reemployment adjustments as may be warranted. (Reference should be made to reference (e).)

--BuMed. Ross T. McIntire. --BuPers. L. E. Denfeld.

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BUREAU OF MEDICINE & SURGERY,
NAVY DEPARTMENT,
WASHINGTON 25, D.C.

LT.JG E.G. CARDWELL W-VS H USNR.